



MISSOURI DEPARTMENT OF NATURAL RESOURCES
SOLID WASTE MANAGEMENT PROGRAM
CLOSURE AND POST-CLOSURE COST WORKSHEET

This worksheet is only required for those facilities that accept waste after Jan. 1, 2004. Others may use the worksheet if they choose.

DATE		NAME OF FACILITY				PERMIT NUMBER	
Total permitted acreage (including undeveloped areas)		Total acreage with waste in place (including officially closed areas)		Total acreage with official closure approval			
SUBTITLE D	NON-SUBTITLE D	SUBTITLE D	NON-SUBTITLE D	SUBTITLE D	NON-SUBTITLE D		

1. HOW MANY ACRES IS THIS FINANCIAL ASSURANCE INSTRUMENT (FAI) INTENDED FOR?
_____ acres for closure _____ acres for post-closure

2. DESCRIPTION OF AREA (CELL NUMBER, ETC.)

3. WHAT IS THE APPROVED FINAL COVER SYSTEM DESIGN?
☐ Subtitle D: one foot of compacted clay overlain with a geomembrane, a drainage layer and two feet of vegetative soil.
☐ Standard soil cover: two feet of compacted clay overlain with one foot of vegetative soil.
(If your facility has both subtitle D and non-subtitle D areas, separate worksheets are advisable for these areas to avoid confusion.)

4. HAS AN EASEMENT BEEN GRANTED TO THE MISSOURI DEPARTMENT OF NATURAL RESOURCES FOR ACCESS TO AND USE OF THE BORROW MATERIAL FOR CAP CONSTRUCTION?
☐ YES ☐ NO

5. WHAT IS THE AVERAGE ROUND-TRIP DISTANCE FROM THE LANDFILL (OR PHASE) TO THE BORROW AREA? ROUND TRIP DISTANCE SHOULD BE TO THE NEAREST 1/2 MILE IF LESS THAN FIVE MILES. IF MORE THAN FIVE MILES, ROUND TRIP DISTANCE SHOULD BE TO THE NEAREST MILE. IF THE DEPARTMENT DOES NOT HAVE AN EASEMENT TO THE BORROW AREA, THE ROUND TRIP HAUL DISTANCE IS ASSUMED TO BE 10 MILES.
_____ miles

6. WHAT IS THE APPROXIMATE VOLUME OF SOIL REMAINING IN THE BORROW AREA?
_____ clay (cubic yards) _____ vegetative soil (cubic yards)

7. WHAT IS THE APPROVED GAS CONTROL SYSTEM DESIGN?
☐ Active extraction system ☐ Passive venting system ☐ No gas control system

If you have an active extraction system, check the appropriate box
☐ a. Required to control gas migration ☐ c. Required by other agency (city, county, etc.)
☐ b. Required under NSPS ☐ d. Specified only by design engineer

If you check box "d", is any part of the active gas system constructed at this time?
☐ Yes ☐ No If yes, please provide a general description of the portion(s) of the system that have been installed.

Note: Owners of Subtitle D facilities must provide a closure financial assurance instrument for either an active extraction system or a passive venting system. You must provide a closure FAI for an active system only when you are: 1) Required to install the system by MoDNR to control off-site gas migration, or 2) Required to install the system under the Federal New Source Performance Standards (NSPS), or 3) Required to install the system by another regulatory agency (city, county, etc.)

If you own a Subtitle D facility and meet any of the conditions, complete Form A. If you own a Subtitle D facility and do not meet any of these conditions, you are only required to provide a closure FAI for a passive venting system. Complete Form B. If you own a non-Subtitle D facility (with a soil cap), you are not required to provide a closure FAI for a gas control system at all unless you also meet at least one of the above conditions. If you have installed any portion of an active gas control system, you must provide post-closure maintenance funds for the portion of the system that has been constructed. Do this by checking the appropriate box on the post-closure cost worksheet and adding that amount to the total.

8. HOW MANY GROUNDWATER MONITORING WELLS DO YOU HAVE?

_____ wells

9. LIST THE PRIMARY AND SECONDARY WASTEWATER TREATMENT PLANTS USED FOR LEACHATE DISPOSAL, AND THE COST OF DISPOSAL.

_____ (Primary plant) \$ _____ per gallon _____ (Secondary plant) \$ _____ per gallon

☐ Check if the facility discharges directly to a wastewater treatment plant.

10. WHAT IS THE ESTIMATED POST-CLOSURE LEACHATE GENERATION RATE AND HOW WAS IT DERIVED?

_____ (gal/acre/day) ☐ HELP model ☐ Other (explain)

CLOSURE COSTS

FINAL COVER SYSTEM

Subtitle D (composite cover) _____ acres x \$ (FROM TABLE 1) _____ per acre = \$ _____

Non-Subtitle D (soil cover) _____ acres x \$ (FROM TABLE 1) _____ per acre = \$ _____

GAS CONTROL SYSTEM

Active extraction system (Complete Form A and write the amount in the right column). \$ _____

Passive gas venting system (Complete Form B and write the amount in the right column). \$ _____

Note: Owners are not required to provide an FAI for an **active** gas system unless required to install the system for one of the reasons listed under section 7 of this worksheet. However, owners of Subtitle D landfills are required to provide an FAI for a **passive** gas system if they do not provide one for an active system.

OTHER CRITICAL DESIGN FEATURES

Include total cost for construction of other critical design features. Attach separate sheet(s) for cost calculations. \$ _____

TOTAL CLOSURE COST (sum of all lines) \$ _____

POST-CLOSURE COSTS**INSEPARABLE ANNUAL COSTS**

Annual landfill inspection and reporting		\$	1,000
Gas monitoring and reporting		\$	4,450
Annual groundwater sampling and analysis cost	_____ wells x \$2,000 =	\$	_____
Annual groundwater monitoring system maintenance and statistics cost.		\$	13,700
<input type="checkbox"/> Leachate system maintenance (Check if applicable and write this amount in space provided)	\$3,100	\$	_____
<input type="checkbox"/> Leachate testing (Check if applicable and write this amount in space provided)	\$2,250	\$	_____
<input type="checkbox"/> Active gas extraction system maintenance and utilities (Check if applicable and write this amount in space provided)	\$17,600	\$	_____
<input type="checkbox"/> Passive gas system maintenance (Check if applicable and write this amount in space provided)	\$1,600	\$	_____

SEPARABLE ANNUAL COSTS

Cap repair and maintenance	_____ acres x _____ =	\$	_____
	(FROM TABLE 1)		
<input type="checkbox"/> Leachate treatment (check if applicable)	_____ acres x _____ x _____ =	\$	_____
	(GAL/ACRE/YEAR) (COST PER GAL)		
<input type="checkbox"/> Leachate hauling (check if applicable)	_____ acres x _____ x \$0.05 =	\$	_____
	(GAL/ACRE/YEAR)		

ANNUAL COSTS FOR OTHER CRITICAL DESIGN FEATURES

Include total annual cost for maintenance of other critical design features. Attach separate sheet(s) for cost calculations.

\$ _____

TOTAL ANNUAL POST-CLOSURE COST

Sum of all annual post-closure costs

\$ _____

TOTAL POST-CLOSURE COST

Annual post-closure costs x 30 years

\$ _____